



INTERNAL CORRESPONDENCE

NUCLEAR DIVISION

POST OFFICE BOX Y, OAK RIDGE, TENNESSEE 37830

To (Name) Mr. J. M. Case
Division Mr. F. L. Culler, Jr.
Location Mr. C. C. Hopkins
Mr. R. A. Winkel

Date October 22, 1973

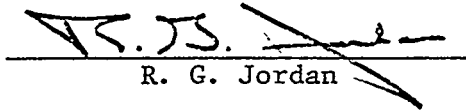
Originating Dept.

Answering letter date

Copy to Mr. P. C. Fourney
Mr. R. F. Hibbs
Mr. P. R. Vanstrum

Subject Inventory of Radioactivity
Released to Onsite and
Offsite Environments

The AEC has requested an inventory of quantities and locations of radioactivity in the environment on and near AEC sites (refer to Mr. Travis' letter of October 18). Mr. Harold Abee will compile the information for the Nuclear Division with the assistance of your Environmental Control Coordinators. In view of the time available for answering this request and the potential sensitivity of the information, your timely review of the data from your installation is especially requested.

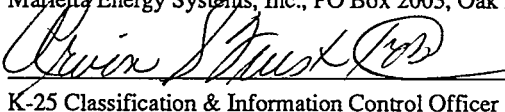

R. G. Jordan

RGJ:ayb

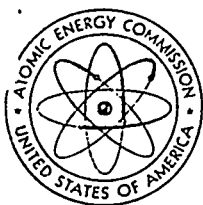
APPROVAL FOR RELEASE

Unnumbered 1-page ltr, dtd 10/22/73, RG Jordan to
Document # JM Case, INVENTORY OF RADIOACTIVITY
Title/Subject RELEASED TO ONSITE AND OFFSITE
ENVIRONMENTS; and 5-page attachment.

Approval for unrestricted release of this document is authorized by the Oak Ridge K-25 Site Classification and Information Control Office, Martin Marietta Energy Systems, Inc., PO Box 2003, Oak Ridge, TN 37831-7307.


K-25 Classification & Information Control Officer

Date 1/29/73



UNITED STATES
ATOMIC ENERGY COMMISSION

OAK RIDGE OPERATIONS
P.O. BOX E
OAK RIDGE, TENNESSEE 37830

1973 OCT 18 PM 1 39

AREA CODE 615
TELEPHONE 493-8611

October 18, 1973

Union Carbide Corporation
Nuclear Division
ATTN: Mr. R. G. Jordan, Manager
Safety and Environmental Protection
P. O. Box Y
Oak Ridge, Tennessee

Gentlemen:

INVENTORY OF RADIOACTIVITY RELEASED TO ONSITE AND OFFSITE ENVIRONMENTS

The chairman of an AEC-wide coordinating committee for plutonium and transuranic activities has requested that an inventory be developed of the quantities and locations of radioactivity in the environment on and near AEC sites. Much information concerning reasonably current release and disposal activity is already available at AEC Headquarters; however, the available information is not complete, nor does it include sufficient historical data.

Please compile up-to-date inventories of the quantities of radioactivity that have been released, disposed of, or otherwise deposited in the onsite and offsite environment as of December 31, 1972. Inventories should tabulate total and decay-corrected, curie-quantities of specific radionuclides (emphasis on plutonium, transuranics, long-lived, and biologically-significant nuclides) and total radioactivity as follows:

Offsite

atmosphere
surface streams
ground water
burial grounds
soil
other, e.g., spills, ditches,
etc. (specify)

Onsite

evaporation ponds
seepage ponds
trenches
burial grounds
soil
other (specify)

ORIGINAL

October 18, 1973

Qualifications regarding the basis for, or accuracy of, the data should also be provided. For completeness please include available information on decommissioned sites, offsite waste burials at other than commercial burial grounds, etc., that have at any time been associated with your operations.

Inventories should be compiled from currently available data. Any data already provided via other systems, e.g., nuclear materials information system, waste management plans, etc., need only be referenced. Locations of discharged or disposed wastes for which quantitative data are not available should be identified.

Please provide us with this information not later than November 8, 1973. Questions should be directed to the Environmental Protection Branch, extension 3-4176.

Your assistance is appreciated.

Sincerely,

Wayne Amalley, acting

William H. Travis, Director
Safety & Environmental Control Division

OSE:HWH

cc: J. M. Case, UCCND-Y-12
F. M. Culler, ORNL
R. F. Hibbs, UCCND
H. D. Hickman, M, ORO
C. C. Hopkins, UCCND-PAD
C. A. Keller, UEO, ORO
J. A. Lenhard, R&TS, ORO
B. N. Stiller, PAD
R. A. Winkel, UCCND-ORGDP

ORNL

Radioactive Wastes Transferred to Pits and Tranches (Curies)

1951-1960	1961-1966				
Gross B	⁹⁰ Sr	¹³⁷ Cs	¹⁰⁶ Ru	⁶⁰ Co	TRE
472,406	143,549	428,688	7,712	4,401	1,497

Radioactive Wastes Disposed of by Hydrofracture - 1964-1972

Curies				gms	
⁹⁰ Sr	¹³⁷ Cs	¹⁰⁶ Ru	⁶⁰ Co	²³⁹ Pu	²⁴¹ Cm
30,956	448,955	5,310	1,198	82	2

Radionuclides Discharged to Clinch River (Curies)

1944-1949	Gross B -	3,412			
1949-1972	¹³⁷ Cs	681.9			
	¹⁰⁶ Ru	6,929.9			
	⁹⁰ Sr	1,150			
	TRE (-Ce)	1,294.5			
	¹⁴⁴ Ce	341.5			
	⁹⁵ Zn	376			
	⁹⁵ Nb	286.3			
	¹³¹ I	173.2			
	⁶⁰ Co	316.2			
	³ H	70,403	(1964-1972)		

Process Waste Treatment Sludge Pit - 1967-1972

⁹⁰Sr - 360 Curies

Radioactive Wastes Discharged from ORNL Stacks - (Curies)

1962-1972 ¹³¹I - 342.5
 1969-1972 INERT GASES - 343,800

ORGDP

1969-1972 Uranium Discharged to Atmosphere - 0.72 curies
and Surface Streams

1944-1972 Uranium Disposed of in - 17.16 curies
Solid Form.

1944-1959 Uranium in Soil near Feed - 2.37 curies
Plant and in Poplar Creek

SUMMARY OF RADIOACTIVITY RELEASED

(Estimates)

1952 thru 1972

ONSITE

C-749 Burial Grounds	Uranium (Mostly depleted uranium metal)	79.5 Curies
C-404 Holding Pond (later converted to solid RAD waste)	Uranium (Uranium liquid waste, Metals plant slag, Rejected depleted UF ₄ , Filter cake).	574.6 Curies
C-404 Holding Pond (later converted to solid RAD waste)	Thorium - 230	0.1 Curies
Soil	Uranium (settled material from releases and from waste storage container failures) Most of the Uranium was normal or depleted in the ²³⁵ U isotope.	1.1 Curies

OFFSITE

Atmosphere	Uranium (mostly normal or depleted)	17.6 Curies
Atmosphere	⁹⁹ Tc	68.0 Curies
Surface Streams	Uranium (mostly normal or depleted)	6.2 Curies
Surface Streams	²³⁷ Np	2.8 Curies
Surface Streams	²³⁹ Pu	11.7 Curies
Surface Streams	²³⁰ Th	0.1 Curies
Surface Streams	⁹⁹ Tc	508.0 Curies

No attempt was made to estimate quantity of uranium to offsite soil. Our routine soil samples for determination of uranium indicate approximately twice background of uranium concentration at the AEC property boundary (about one mile of plant).

ChemRisk Document Request Transmittal Form

(This section to be completed by ChemRisk)

Name S. Sandberg Division 1 TSP is requested to provide the following document

Address _____

Date of Request 12/10 Expected receipt of document 12/21

Title of requested document Inventory of Radioactivity...

Document Number 800812

Access Number of Document _____ Date of Document 10/22/73

(This section to be completed by Derivative Classifier)

Derivative Classifier T.C. Jordan Phone 4 1645

Date document transmitted to Dr. Quist 1/15/93

Date release received from Dr. Quist OK 082 1/29/93

PUBLIC RELEASE STAMP attached to each copy of document (YES NO)

Date document sent to reproduction _____ Expected Return _____

Delivered to DRC by _____ Date _____

(This section to be completed by DRC)

Received by DRC _____ Date _____

Processed _____

Mailed _____

1993 FEB -3 PM 5:55

Rec'd K25 CO 1/29/93
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c: J. Lamb, File K25CO EC(4716)

Person requesting release JENNIFER LAMB (CHEMRISK) Telephone No. 4 0745
Mailing Address K-1200 MS-7262 Division or Organization _____

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Some documents require special review and the processing time will be longer).

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Approval of request for Classification and Information Control Office to release document (department head or higher):

Signature: _____ Date _____

DOCUMENT DESCRIPTION (to be completed by requester)

Document number UNNUMBERED/800812 Pages 6

Document title INVENTORY OF RADIOACTIVITY RELEASED TO ONSITE AND OFFSITE ENVIRONMENTS

Author(s) (indicate other divisions or organizations, if applicable) RG JORDAN

Document type (See Doc. Prep. Guide, Chs. 1 and 2, for definitions of document types):

- ☐ Formal Report ☐ Progress Report ☐ Informal R&D Report ☐ Abstract ☐ Drawing
☐ Administrative ☒ Correspondence ☐ Internal Technical Data ☐ Photo ☐ Other Visuals

☐ Journal Article (identify journal): _____

☐ Oral Presentation (identify meeting, sponsor, location, date): _____

Will oral presentation be published in program, booklet, brochure, etc.? ☐ Yes ☐ No ☐ Not Known

Will copies of the oral presentation be distributed ☐ before, ☐ after, ☐ during the meeting? ☐ No distribution will be made.

☐ Other (specify): _____

Purpose of release HEALTH STUDY FEASIBILITY PROJECT

Previously cleared documents containing similar information _____

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Remarks _____

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☐ No ☐ Yes (Name of program: _____)

Is the subject area of this document closely related to a prior or current classified program at Martin Marietta Energy Systems, Inc.?

☐ No ☐ Yes Within the Department of Energy? ☐ No ☐ Yes

Name or Description of applicable program(s) _____

Additional remarks _____

This document contains no classified information.

Derivative Classifier signature R. J. Jordan Date 1/14/93

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☐ Proprietary

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☐ Other

* Generally identified by sponsor

Remarks: _____

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☐ Yes

☐ No

If yes, list the patent significance and identify page number(s) and line number(s) in the space immediately following (or attach separate pages).

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☐ Document must be reviewed by DOE Patent Group before release

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Patent Section Representative _____

Date _____

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☐ Approved for release with changes (see below)

☐ Approved for release without change

Classification Officer signature _____

Date _____

Technical Information Office Action Taken:

☐ Not approved for release (see below)

☐ Approved for release with changes (see below)

☒ Approved for release without change

To Chem Risk

Technical Information Officer Signature _____

Date _____

Send to OSTI?

☐ Yes

☐ No

Category Distribution: _____

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OFFSITE ENVIRONMENTS

AUTHORS: WH TRAVIS (USAEC)

DOCUMENT TYPE: CORRESPONDENCE

DOCUMENT DATE: 10-18-73

PURPOSE OF RELEASE: HEALTH STUDY FEASIBILITY REPORT

COPY RIGHTED MATERIAL: NO

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AUTHORS: NO AUTHOR GIVEN

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DOCUMENT TITLE: SUMMARY OF RADIOACTIVITY RELEASED (ESTIMATES) 1952
THRU 1972

AUTHORS: NO AUTHOR GIVEN

DOCUMENT TYPE: REPORT

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